

Application Serial No: 10/013,084
Attorney Docket No.: 51959 (ACT-173)

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical device package which comprises:
 - a) a substrate comprising an upper surface;
 - b) an optical fiber mounted to the substrate;
 - c) an optical semiconductor component on the substrate;
 - d) e) a frame mounted to the upper surface of the substrate, the frame comprising conductive pathways extending between a top surface of the frame and a bottom surface of the frame, wherein the frame defines an opening from the top surface to the bottom surface, and the optical semiconductor component is disposed in the opening; and
 - e) d) contact means disposed on the top surface of the frame for flip mounting the optical device package to a platform.
2. (Previously Presented) The optical device package of claim 1 wherein the conductive pathways comprise at least one conductive via which extends through the frame.
3. (Previously Presented) The optical device package of claim 1 wherein the conductive pathways comprise at least one conductive path which extends along a side surface of the frame.
4. (Original) The optical device package of claim 1 wherein the optical fiber is disposed between the substrate and the frame.
5. (Original) The optical device package of claim 4 wherein the frame has a recess for accommodating the optical fiber.
6. (Original) The optical device package of claim 4 wherein the optical fiber is disposed through a ferrule.
7. (Previously Presented) The optical device package of claim 2 wherein the contact means comprises at least one solder ball and the at least one conductive via terminates at one end at the solder ball.

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8. (Original) The optical device package of claim 7 further comprising a conductive trace on the upper surface of the substrate in electrical communication with the conductive pathway of the frame.
9. (Canceled)
10. (Original) The optical device package of claim 1 wherein the optical semiconductor component is selected from the group consisting of a laser diode, light emitting diode and photodetector.
11. (Previously Presented) The optical device package of claim 1 wherein the frame comprises an interior ledge.
12. (Previously Presented) The optical device package of claim 11 wherein a lid comprising a top surface is mounted to the ledge of the frame such that the top surface of the lid is positioned below the level of the top surface of the frame.
13. (Previously Presented) The optical device package of claim 11 wherein a lid comprising a top surface is mounted to the ledge such that the top surface of the lid is positioned above the level of the top surface of the frame.
14. (Previously Presented) The optical device package of claim 13 wherein the contact means comprises at least one solder ball comprising a top surface and wherein the top surface of the solder ball is positioned above the level of the top surface of the lid.
15. (Previously Presented) The optical device package of claim 1 wherein the substrate further comprises a lateral groove defining a distal facing stop surface, and the optical fiber comprises a proximal end abutting the distal facing stop surface.
16. (Previously Presented) The optical device package of claim 1 wherein the frame comprises a band-like shape circumscribing an open area and comprises a ledge onto which a lid is mounted.
17. (Previously Presented) The optical device package of claim 1 where the frame comprises has a U-shaped configuration and the optical device package comprises a lid mounted to the upper surface of the substrate, the lid comprising a recess.
18. (Original) The optical device package of claim 1 wherein the frame is fabricated from a sintered ceramic material.
19. (Currently Amended) A method for making an optical device package comprising:
 - a) mounting an optical fiber to a substrate comprising an upper surface;

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- b) forming a conductive trace on the upper surface of the substrate;
 - c) mounting a frame to the substrate, the frame comprising a frame upper surface with at least one solder pad thereon, and a conductive via extending from the solder pad to the conductive trace, the frame defining an opening from the top surface to the bottom surface; and
 - d) mounting an optical semiconductor component on the substrate in the opening in contact with the conductive trace and in alignment with the optical fiber.
20. (Previously Presented) The method of claim 19 further comprising mounting a lid to the frame.
21. (Previously Presented) The method of claim 19 further comprising mounting a lid to the substrate.
22. (Currently Amended) A method for assembling an electronic circuit comprising:
- a) providing an optical device package which comprises
 - i) a substrate comprising an upper surface;
 - ii) an optical semiconductor component mounted to the substrate;
 - iii) an optical fiber mounted to the substrate in alignment with the optical semiconductor component;
 - iv) a frame mounted to the upper surface of the substrate, the frame comprising an upper surface with a patterned array of solder balls thereon and a bottom surface, and at least one conductive pathway extending from each solder ball to the upper major surface of the substrate, wherein the frame defines an opening from the top surface to the bottom surface, and the optical semiconductor component is disposed in the opening; and
 - v) at least one conductive trace electrically connecting the at least one conductive pathway and the optical semiconductor component;
 - b) providing a circuit board comprising a patterned array of bonding pads which is a mirror image of the patterned array of solder balls on the frame;
 - c) inverting and positioning the optical device package such that individual solder balls of the patterned array solder balls of the optical device

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package are in contact with corresponding individual bonding pads of the patterned array of bonding pads on the circuit board; and

- d) fusing the solder balls to the corresponding bonding pads.
- 23. (Previously Presented) The optical device package of claim 1 wherein the optical fiber lies in a groove in the substrate upper surface.
- 24. (Previously Presented) The optical device package of claim 1 wherein the package is hermetically sealed.
- 25. (Previously Presented) The method of claim 19 wherein the optical fiber lies in a groove in the substrate upper surface.
- 26. (Previously Presented) The method of claim 19 wherein the package is hermetically sealed.
- 27. (Previously Presented) The method of claim 22 wherein the optical fiber lies in a groove in the substrate upper surface.
- 28. (Previously Presented) The method of claim 22 wherein the package is hermetically sealed.
- 29. (New) The optical device package of claim 1 where the frame has a U-shaped configuration.